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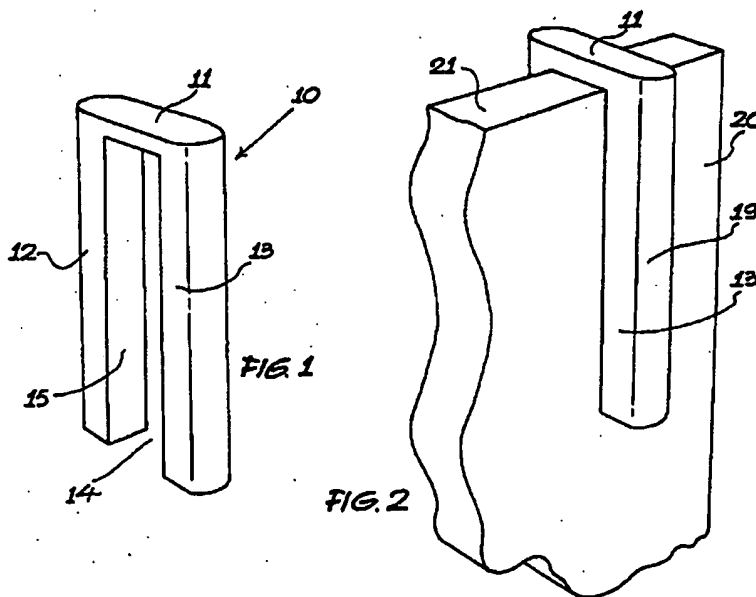
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Selected US specifications from IPC sub-classes E05C
E05F**(54) A door stop**

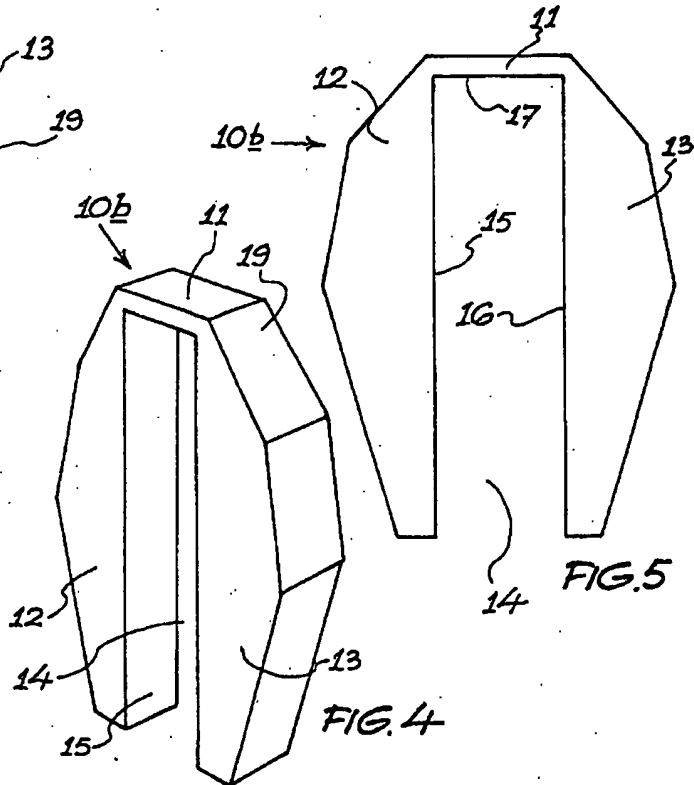
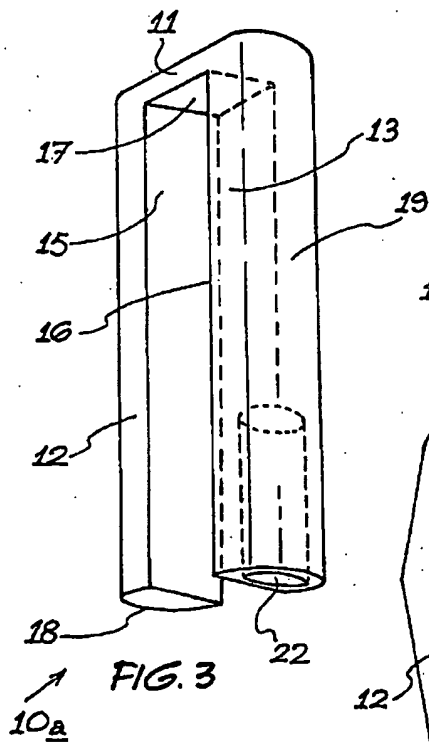
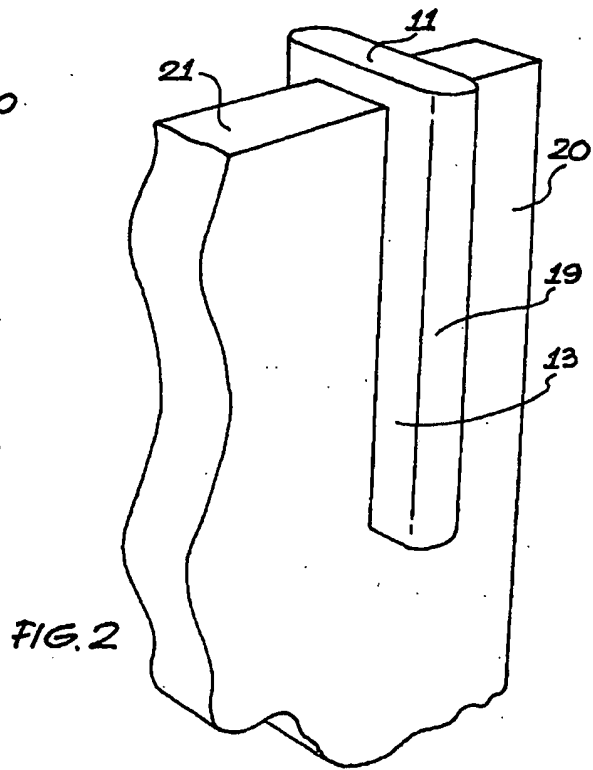
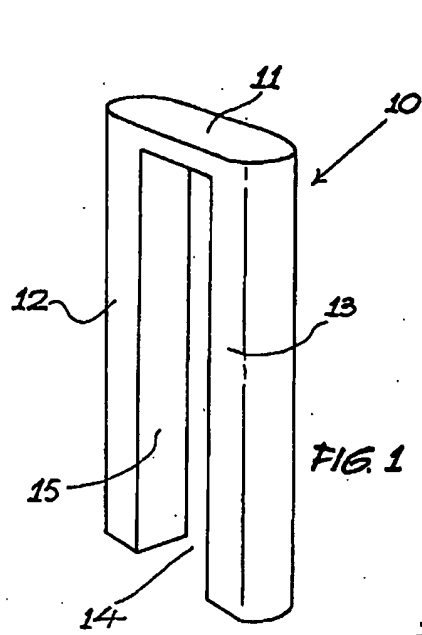
(57) A door stop for preventing complete closure of a door consists of a base (11) having two legs (12, 13) and adapted in use to fit over an edge (21) of the door (20).

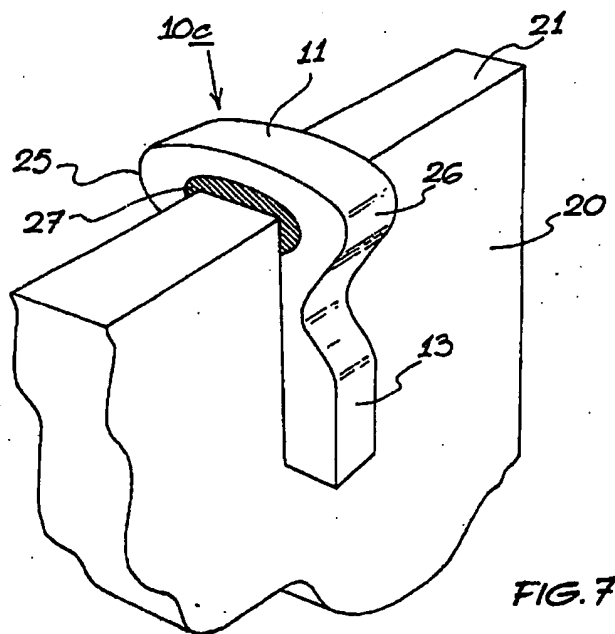
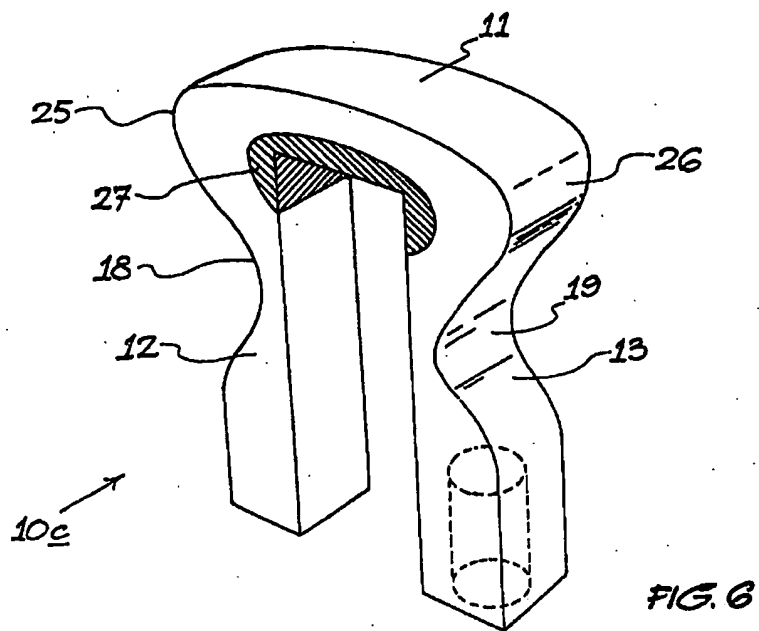
The door stop may consist simply of a base and only one leg provided that in use the door stops fits over an edge of the door and is supported in position on said edge of the door. The door stop could also be shaped to fit around existing door handles and latches (e.g. as in Fig. 9, not shown).

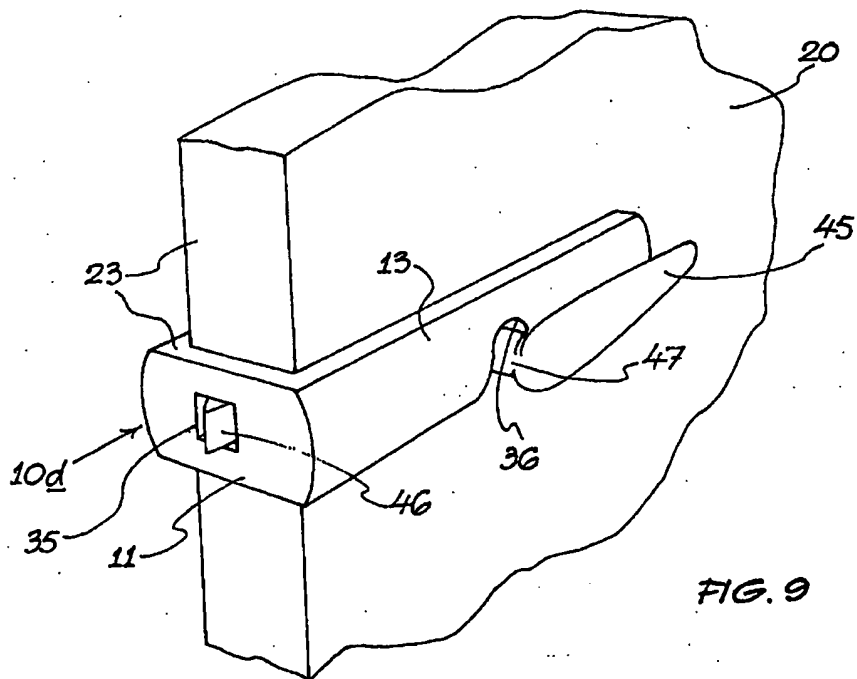
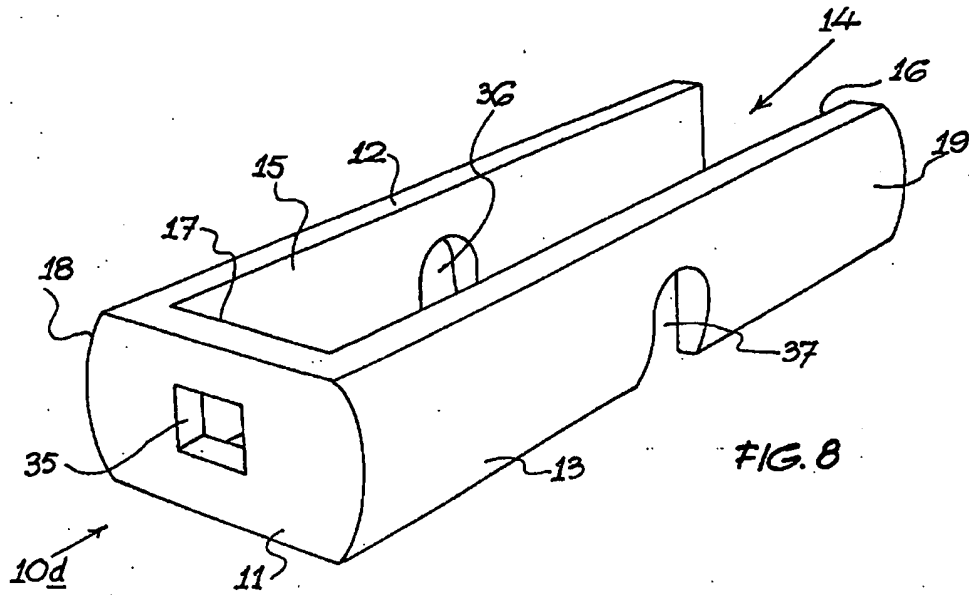


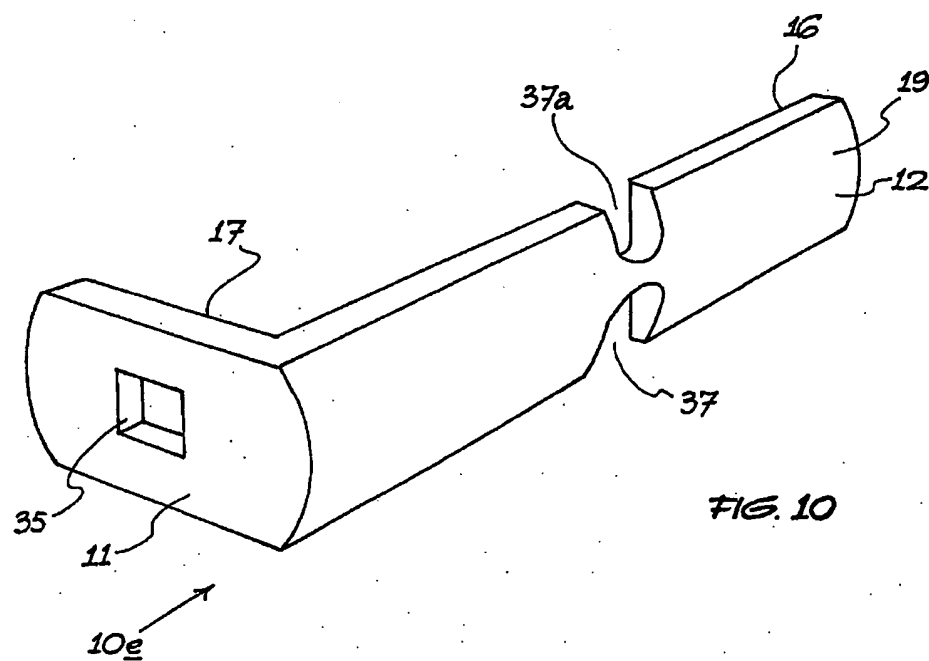
The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

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SPECIFICATION

A door stop

- 5 This invention relates to a construction of a door stop.

It is an established fact that each year there are a substantial number of accidents in the home involving doors. Many of these accidents involve children and in many instances the accident is as simple as a door closing upon a child's hand/fingers. Children also have a tendency to slam doors often resulting in the slammed door hitting and injuring another child. In order to minimise such accidents parents often use a door wedge or a door stop—however while these devices have proved reasonably successful they are often removed from their operative position by children and are consequently not wholly effective.

The present invention is directed towards overcoming the stated problem.

The invention therefore provides a door stop which comprises means for preventing the complete closure of a door which means comprises an element having a base and at least one leg connected to the base to form an L-shaped element which element is adapted, in use, to fit over an edge of the door.

Preferably the base has two legs connected thereto in parallel spaced apart relationship to form a U-shaped element having a slot which element is adapted, in use, to fit over or straddle an edge of the door.

Preferably at least one of the legs of the element has at the free end thereof a recess adapted, in use, to accommodate the free end of a stick or broom for the placing of or removal of the element from the top edge of the door.

Preferably the element is waisted so that the outer surface of each of the legs is substantially S-shaped in cross-section providing a respective bulbous profile at the interface between the legs and the base.

Preferably the element is of double walled construction having a substantially hollow interior except in the region of the interface between the base and the legs which region is of solid plastics construction.

Preferably the interior is filled with an energy absorbing gel.

Preferably each of the legs has a respective handle engaging slot therein adapted, in use, for engaging with a respective handle on either side of the door when the element is in position along a side edge of the door.

Preferably the base has a recess or hole therein adapted, in use, for engaging with a catch operatively associated with the handle.

Preferably the leg of the element has at least one handle engaging slot therein adapted, in use, for engaging with a handle of

the door when the element is in position along the side edge of the door.

Preferably the leg has two slots in mirror image relationship to enable the element to be used on either a right hand or a left hand closing door.

The invention will be understood in greater detail from the following description of preferred embodiments thereof given by way of example only and with reference to the accompanying drawings in which:

Figure 1 is a perspective view of a first embodiment of a door stop according to the present invention;

Figure 2 is a perspective view of the door stop of Figure 1 in an operative position on a door;

Figure 3 is a perspective view of a second embodiment of a door stop according to the present invention;

Figure 4 is a perspective view of a third embodiment of a door stop according to the present invention;

Figure 5 is a front view of the door stop of Figure 4;

Figure 6 is a perspective view of a fourth embodiment of a door stop according to the present invention;

Figure 7 is a perspective view of the door stop of Figure 6 in an operative position on a door;

Figure 8 is a perspective view of a fifth embodiment of a door stop according to the invention;

Figure 9 is a perspective view of the door stop of Figure 9 in an operative position on a door; and

Figure 10 is a perspective view of a sixth embodiment of a door stop according to the invention.

Referring now to the drawings in which like numerals refer to similar parts in several of the drawings and in particular to Figures 1—2 thereof, there is shown a first embodiment of a door stop according to the invention indicated generally at 10 comprising a base 11, and two legs 12 and 13, one at each end of the base 11 to form a slot 14. The legs 12 and 13 have a straight edge flat interior surface such that the slot 14 is defined by flat surfaces 15, 16 bridged by a flat surface 17. The exterior surface 18, 19 of each leg 12, 13 is curved.

In use, the door stop 10 is placed over the top edge 21 of a door 20 as shown in Figure 2 of the accompanying drawings. The slot 14 accommodates the door 20 with the surfaces 15—17 engaging with the complementary door surfaces. The curved exterior surfaces 18, 19 provide a good surface for engagement with the frame (not shown) of the door 20.

It will be readily appreciated that the position of the door stop 10 on the top edge 21 of the door 20 determines the degree of partial closure of the door 20 which is possible.

For example, the nearer the door stop 10 to the free end of the door 20 the greater the degree of closure possible. However if the door stop 10 is positioned adjacent the hinged end of the door 20 the door 20 is held in a substantially fully open position.

Referring to Figure 3 of the accompanying drawings there is shown a second embodiment of a door stop 10a according to the invention which is essentially similar to the door stop 10 except that one leg 13 thereof is provided with a substantially cylindrical recess 22. In use the recess 22 can accommodate the end of a stick or a broom (not shown) to allow the user to place the door stop 10a in position on the door 20 or alternatively to remove the door stop 10a from the door 20.

Referring to Figures 4 and 5 of the accompanying drawings there is illustrated a third embodiment of a door stop 10b according to the present invention which is essentially similar to the door stop 10 except that the exterior surfaces 18,19 of the legs 12,13 have an angled shape to give the door stop 10b a basic hexagonal shape. If desired, one of the legs 13 may be provided with a recess (not shown) similar to the recess 22 of the door stop 10a.

Referring now to Figures 6 and 7 of the drawings, there is shown a fourth embodiment of a door stop 10c according to the invention which is essentially similar to the door stop 10 except that in cross-section, the exterior surfaces 18,19 of the legs 12,13 have a waisted shape to give the door stop 10c a bulbous profile 25, 26 in the vicinity of the interface between the base 11 and the legs 12,13. The door stop 10c is preferably of double wall construction thereby providing a substantially hollow space. If desired, the space may be filled with an energy absorbing gel (not shown). However, in order that the door stop 10c may firmly engage with the edge 21 of the door 20, a section of the door stop 10c comprises solid plastics material 27. The bulbous profile 25,26 of the door stop 10c provides higher energy absorbing capabilities when compared with the embodiments of the door stop 10, 10a and 10b described above.

Referring now to Figures 8 and 9 of the drawings, there is shown a fifth embodiment of a door stop 10d according to the invention which is essentially similar to the door stop 10 except that the base 11 has a hole 35 therein and each of the legs 12,13 has a respective handle engaging slot 36,37 therein.

In use, the door stop 10d is placed over the free side edge 23 (i.e. the side 23 which is remote from the hinged edge) of the door 20 having handles 45 (Figure 9 of the drawings). The door stop 10d is initially placed on the edge 23 at a location above the handles 45 which operate a catch 46 of the door 20.

One or both of the handles 45 is then depressed so as to withdraw the catch 46 and with the handles 45 in the depressed condition, the door stop 10d is pushed downwardly so that the respective slots 36,37 engage with the cylindrical part 47 of each handle 45. When thus engaged, the hole 35 will be in register with the catch 46 and the handles 45 may be released whereupon the catch 46 engages in the hole 35. To release the door stop 10d, the above described operation is carried out in reverse.

If desired, when placing the door stop 10d on the door 20, the hole 35 may be placed substantially in register with the catch 46 with the legs 12,13 angled upwardly. With the catch 46 engaged in the hole 35, the free ends of the legs 12,13 are pushed downwardly until the slots 36,37 engage with respective cylindrical parts 47. During this operation, there is no need to depress the handles 45.

If desired, the hole 35 may be omitted having regard to the fact that it is of no consequence if the catch 46 is in the depressed condition when the door stop 10d is *in situ*.

As a further alternative, the hole 35 may be replaced by a recess (not shown) for accommodating the catch 46.

The provision of a hole 35 or recess provides for a more secure placement of the door stop 10d.

With particular reference to Figure 10 of the drawings, there is shown a sixth embodiment of a door stop 10e according to the invention which is essentially similar to the door stop 10d except that the leg 13 is omitted. However, if only one handle engaging slot 37 is provided, it means that for practical purposes, two versions of the door stop 10d without the leg 13 would have to be constructed for use on both left hand and right hand closing doors. Accordingly, as shown in Figure 10, the door stop 10e has a second handle engaging slot 37a in mirror image relationship to the slot 37 so as to enable the door stop 10e to be used on either left or right hand closing doors. The door stop 10e may be used in a manner similar to that described with reference to the door stop 10d. If desired, the hole 35 may be omitted or replaced by a recess (not shown).

The door stops 10, 10a, 10b, 10c, 10d, or 10e according to the invention may be made from any reasonably strong material—however it is preferred that they be moulded from a strong plastics material which also has an energy absorbing facility.

125 CLAIMS

1. A door stop which comprises means for preventing the complete closure of a door wherein the means comprises an element having a base and at least one leg connected to the base to form an L-shaped element which

element is adapted, in use, to fit over an edge of the door.

2. A door stop as claimed in claim 1 wherein the base has two legs connected thereto in parallel spaced apart relationship to form a U-shaped element having a slot which element is adapted, in use, to fit over or straddle an edge of the door.

3. A door stop as claimed in claim 2 wherein at least one of the legs of the element has at the free end thereof a recess adapted, in use, to accommodate the free end of a stick or broom for the placing of or removal of the element from the top edge of the door.

4. A door stop as claimed in claim 2 or claim 3 wherein the element is waisted so that the outer surface of each of the legs is substantially S-shaped in cross-section providing a respective bulbous profile at the interface between the legs and the base.

5. A door stop as claimed in claim 4 wherein the element is of double walled construction having a substantially hollow interior except in the region of the interface between the base and the legs which region is of solid plastics construction.

6. A door stop as claimed in claim 5 wherein the interior is filled with an energy absorbing gel.

7. A door stop as claimed in any of claims 2 or 3 wherein each of the legs of the element has a respective handle engaging slot therein adapted, in use, for engaging with a respective handle on either side of the door when the element is in position along a side edge of the door.

8. A door stop as claimed in claim 7 wherein in that the base has a recess or hole therein adapted, in use, for engaging with a catch operatively associated with the handle.

9. A door stop as claimed in claim 1 wherein the leg of the element has at least one handle engaging slot therein adapted, in use, for engaging with a handle of the door when the element is in position along the side edge of the door.

10. A door stop as claimed in claim 9 wherein the leg has two slots in mirror image relationship to enable the element to be used on either a right hand or a left hand closing door.

11. A door stop as claimed in claim 9 or claim 10 wherein the base has a recess or hole therein adapted, in use, for engaging with the catch operatively associated with said handle.

12. A door stop substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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